

# BEST AVAILABLE COPY

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN THE APPLICATION OF:

GARY M. FADER ET AL.

CASE NO: BB1339 US PCT

APPLICATION SERIAL NO.: 09/857581

GROUP ART UNIT: 1652

FILED: JUNE 5, 2001

EXAMINER: D. M. RAMIREZ

FOR: NUCLEIC ACID FRAGMENTS ENCODING  
ISOFLAVONE SYNTHASE

CONFIRMATION NO.: 6372

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

## DECLARATION UNDER 37 C.F.R. §1.131

Sir:

I, Dr. Brian McGonigle, hereby declare that:

I am currently Senior Research Biologist at E.I. du Pont de Nemours and Company. A copy of my curriculum vitae is attached.

I am co-inventor of the above-identified application. I understand claims 1, 3, 4, 10-12, 15, 26, 28, 29, and 44 of the subject application to be rejected under 35 U.S.C. §102(a) as anticipated by Steele et al., Archives of Biochemistry and Biophysics, 1999, vol. 37(1):146-150 (hereinafter "Steele et al.").

At a date prior to July 1, 1999, the publication date of the Steele et al. reference, Gary M. Fader, Woosuk Jung, Joan T. Odell, Xiaodan Yu, and I conceived and reduced to practice the invention that is the subject of U.S. application Serial No. 09/857,581, filed June 5, 2001, entitled "Nucleic Acid Fragments Encoding Isoflavone Synthase," which claims priority to PCT/US00/01772, filed January 26, 2000. At the time the invention was made, each of us was employed by DuPont, to whom we had a duty to assign all inventions in accordance with the Patent Policy of DuPont. Exhibit A contains redacted dates prior to July 1, 1999.

Pages from my laboratory notebook, pages 64-69, 79 and 80, that predate July 1, 1999, are set forth in Exhibit A. The cloning of isoflavone synthase from different crops is disclosed, see page 64. This work is titled "Isoflavone Synthase by Brian McGonigle and Alfred Ciuffetelli." Alfred Ciuffetelli was my research technician at the time who carried out experiments pursuant to my instructions.

Specifically, two different isoflavone synthases from soybean are disclosed in Exhibit A as having been previously described in an earlier quarterly report. The report included in Exhibit A discloses the cloning of isoflavone synthases from an additional eight legumes including mung bean,

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red clover, snow pea, white clover, lentil, hairy vetch, alfalfa, and lupine. See pages 65-68 for amplification of each of the isoflavone synthases and yeast assays for isoflavone synthase activity of some of the clones. Also an additional isoflavone synthase was cloned from soybean (also a legume).

The isoflavone synthase information for the additional legumes was then forwarded to Steven Vollmer, see page 69. This information included the sequences for sixteen isoflavone synthases from eight different legumes. A consensus sequence resulting from the alignment of the sixteen sequences differs from Seq Id No. 66 at amino acid position 96. Seq Id No. 66 sets forth "Xaa" at position 96, whereas the consensus sequence from the sixteen sequences results in "His" at amino acid position 96.

The soybean sequence of Steele et al. also discloses "His" at amino acid position 96. Thus, the soybean sequence disclosed by Steele et al. was conceived and reduced to practice by us prior to publication of Steele et al.

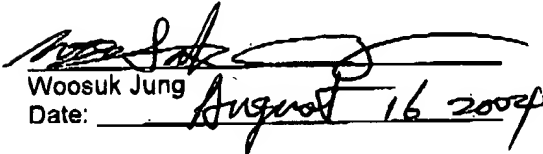
Further, a non-legume, sugar beet, isoflavone synthase was also identified by us prior to July 1, 1999, see Exhibit A, pages 79 and 80. The sugar beet isoflavone synthase sets forth "Asn" at amino acid position 96. Seq Id No. 66 of the present invention includes each of these legume and non-legume isoflavone synthase sequences. Thus Seq. Id. No. 66 of the present invention was conceived and reduced to practice prior to publication of Steele et al.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

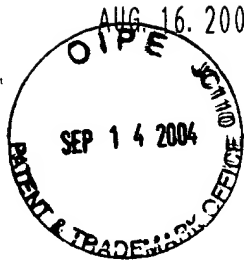
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Brian McGonigle  
Date: \_\_\_\_\_

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Gary M. Fader  
Date: \_\_\_\_\_

\_\_\_\_\_  
Joan T. Odell  
Date: \_\_\_\_\_

  
Woosuk Jung  
Date: August 16 2004

\_\_\_\_\_  
Xiaodan Yu  
Date: \_\_\_\_\_



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\_\_\_\_\_  
Brian McGonigle

Date: \_\_\_\_\_

\_\_\_\_\_  
Gary M. Fader

Date: \_\_\_\_\_

\_\_\_\_\_  
Joan T. Odell

Date: \_\_\_\_\_

\_\_\_\_\_  
Woosuk Jung

Date: \_\_\_\_\_

  
\_\_\_\_\_  
Xiaodan Yu

Date: 8/16/2004



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Brian McGonigle  
Date: August 17, 2004

Gary M. Fader  
Date: 8-17-04

Joan T. Odell  
Date: Aug 17, 2004

Woosuk Jung  
Date: \_\_\_\_\_

Xiaodan Yu  
Date: \_\_\_\_\_